Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Journal of the Society of Arts.

FRIDAY, NOVEMBER 29, 1861.

INTERNATIONAL EXHIBITION OF 1862.

The Council beg to announce that the Guarantee Deed is now lying at the Society's House for signature, and they will be much obliged if those gentlemen who have given in their names as Guarantors, as well as others interested in the Exhibition, will make it convenient to call there and attach their signatures to the Document. Signatures for sums amounting in the aggregate to £439,450, have been attached to the Deed.

WEEKLY PROGRESS OF THE INTERNATIONAL EXHIBITION.

There is nothing in the way of novelty to be chronicled in the progress of the building this week. All those portions of the work which were in hand at the date of the last notice in the *Journal* are being pushed forward with great rapidity, and yet the advance does not appear, at first sight, to be so great as when there were only a few columns erected on the ground.

The domes, of course, still form the most attractive feature of the works, so much so that numbers of spectators are always standing in the Prince Albert's and Exhibition roads watching with eager interest the hoisting and fixing of the ties and girders. The cross ribs, which are to form the support of the eastern dome, are fixed on three sides, namely, over the nave, over the south-eastern transept, and over the eastern entrance. Those at the end of the north-eastern transept are also in course of erection. The timber framework on the western side of this dome is in its place as high as the spring of the ribs. The columns of the western dome are rising fast, six being up to the required height, and the ribs over the western entrance in Prince Albert's-road have been begun.

The galleries all round the courts are now roofed in, and the workmen are preparing to cover them with felt and to lay the gutters. The roof over the southern courts extends over the whole of the south-eastern and south-central courts, and a portion of it, which is over the former, is being glazed. The corresponding roof on the north side of the nave is also in course of erection. Since last week great progress has been made in roofing the northern transepts, eight ribs of the one on the west being erected, and seven of the one on the east. The glaziers are at work on the windows of the clerestory of the south-western transept, and the windows themselves are being put up in the corresponding transept on the west.

The iron coping, which forms the gutter of the large picture gallery, has been fixed on the northern or inner front, and this side of the roof is being slated. The slating of the outer front has been completed throughout the length of the building, so that the gallery along the Cromwell-road may now be considered as nearly finished externally. Inside, both the long galleries are floored; the walls of the one on the east of the entrance are also boarded, and the plasterers have commenced the cornice. There can now be no doubt of this magnificent hall being admirably suited for the exhibition of pictures. The proportions strike the visitor immediately as noble; the light falls in such a way as to be equally distributed over the whole gallery, and the walls are high enough to admit of the display of large cartoons, or the equally extensive pictures of the French school. The smaller picture galleries along the Exhibition road are being roofed in, the principals having been erected nearly throughout, and a portion of the top light fixed.

In allotting space in the Exhibition, and fixing the position which different classes of manufactures shall occupy, it will be necessary to distinguish carefully between the necessities of each as regards light. The building is so constructed that any medium may be obtained between the broad glare of day in the glass courts to comparative obscurity under the galleries along the transepts. At the same time it is evident that while manufactures, such as pottery, glass, and goldsmith's work require all the light they can obtain, carriages, building materials, and similar objects, are seen to greater advantage in a more subdued light.

The great cry among exhibitors is still for more space. Letters are received continually, complaining of the small allowance, especially to the large manufacturing towns, and even threats are held out of a refusal to exhibit unless the demands are complied with. It is of the greatest importance that applicants should understand precisely the position of Her Majesty's Commissioners. The space available for exhibition is strictly limited, and every foot at their disposal has been allotted. It follows that any increase in allotment, either individually or in class, must be made at the expense of some other exhibitor or some other industry. Under these circumstances it is imperative that all claims for space should be rigorously investigated. The remedy in every case lies with the Committees; by allotting their space proportionally to the merits of the applicant, and not in proportion to his claim, they may hope to place our manufactures in the Exhibition on that footing of superiority to those of foreign countries which they have always maintained.

The following additional arrangements have been made :—

Uruguay.

Graham Gilmour, Esq., of Glasgow, Vice-Consul of the Republic of Uruguay, will represent the interests of that Republic at the coming Exhibition.

Tunis.

A communication has been received notifying the appointment of Mr. Moses Levy, of 59, Fenchurch-street, as agent for the Tunis Commissioners.

SECOND ORDINARY MEETING.

Wednesday, Nov. 27th, 1861.

The Second Ordinary Meeting of the One Hundred and Eighth Session was held on Wednesday, the 27th inst., John Dillon, Esq., Vice-President of the Society, in the chair.

The following candidates were proposed for election as members of the Society :—

Ames, Henry St. Vincent, M.A.	Cote Ho. Westbury-on-Teym, near Bristol.
Ayerst, Francis	24, Bessborough-gards., S.W.
Benson, Robert	Oxford-street.
Blake, Henry, Woolaston F.R.S.	8, Devonshire-place, Marylebone, W.
Brierley, Henry	8, Surrey-st., Strand, W.C.
Buchan, Jno. Hitchcock	The Grove, Hanwell, Middlesex.
Cator, Geo. Albemarle	Selby, Yorkshire.
Carbutt, Geo. Henry	Liverpool.
Clark, Alexander	Tower-house, Highbury New-park, N., and 15, Gate-st., Lincoln's-inn-fields, W.
Cleugh, Alexander	Imperial Mills, Bromley, E.
Dadley, John	Birmingham.
Douglas, Charles C.	Dale-street, Liverpool.
Douglas, William	High-st., Exchange, Liverpool.
Edwards, Thos. Dyer	5, Hyde-park-gate, Kensington-gore, W.
Ethelston, Rev. Charles Wicksted, M.A.	Rectory, Uplyme, Devon.
Goschen, George Joachim	Eltham, Kent.
Halse, William	12, Love-lane, Aldermanbury, E.C.
Hampton, Thos. Inglis	20, King-st., St. James's, S.W.
Harris, Frederick Wm.	Coal Exchange, E.C.
Hellman, Christian	Club Chamb., Regent-st., S.W.
Hook, John	66, New Bond-street, W.
Jackson, Frederick	Nottingham.
Lyle, J. G.	20, Little Moorfields, E.C.
Makin, Edwin John	Attercliffe, Sheffield.
Martin, Henry	Westwood-villa, Highbury New-park, N.
Michael, Michael Henry	20, The Cedars, Putney, S.W.
Oldershaw, Captain R. Piggott	74, Warwick-sq., Belgravia, S.W.
Pickering, John P.	40, Little Moorfields, E.C.
Schwartz, Henry Wm.	Liverpool
Sears, Henry Beaufort	(Messrs. Carstairs and Co.), Liverpool
Sharp, Wm.	Edward-court, Handsworth, near Birmingham.
Stapleton, Thos. Werney.	Marne-cottage, Roehampton, Surrey.
Stephens, Chas.	Earley-court, near Reading
Tidswell, Edward	1, Friday-street, E.C.
Watson, Geo.	2, Charles-st. Grosvenor-sq. W.
Wertheimer, Sampson	154, New Bond-street, W.
Wood, Geo. Watson	24, Gloucester-street, Belgravia South, S.W.

And as Honorary Corresponding Member.

Vogt, G.	Berne, Switzerland

The following Institution has been taken into Union since the last announcement :—

Kenilworth Institute.

The Secretary stated that Mr. Blanchard Jerrold had been prevented at the last moment by illness from reading the paper announced for this evening, and that Mr. P. L. Simmonds had kindly undertaken to prepare a paper at very short notice.

The Paper read was—

ON THE FOREIGN DEPARTMENT OF THE INTERNATIONAL EXHIBITION OF 1862.

By Peter Lund Simmonds.

I have to claim some indulgence from the members owing to having been pressed into service at a very short notice, with a request that I would give some information as to the Foreign countries that intend to take part in the International Exhibition next year. Now, I believe it is known to many present that I have long paid attention to Colonial matters, but the Foreign portfolio is a little out of my department. However, as in ministerial changes an official is often transferred from one post to another widely different, and is obliged, by the force of circumstances, to make himself acquainted very promptly with the details and proceedings—present, past, and future—which appertain thereto, so I have had to master the subject which has been pressed upon my notice for discussion. Though I fear I can give you very little beyond a *resumé* of much that is generally known to the public—as to the intentions of foreign exhibiting countries, yet I may be able to add some commercial and statistical details, which will serve to bring out the importance of our cultivating closer relations with Foreign Countries, in order that the course of our trade with them may be extended in a ratio somewhat commensurate with the great strides our Colonial trade has made in the last few years.

If we look at the commercial progress and manufacturing results of the past ten years, some degree of merit may fairly be attributed to the extension of that principle of competitive display which was so creditably inaugurated in this metropolis in 1851, and to which the Society of Arts so largely contributed. National exhibitions of art and manufacture had previously been held. France, Germany, and many other countries had gathered together, from time to time, the best works of their art and industry. But the world at large had never before been invited to compete, or to come and inspect for themselves the finest specimens of every kind of produce and manufacture. The germ of many a useful invention, which has since been matured, was then developed. The citizens of many countries there saw *chefs-d'œuvre* of art, and works of skill and mechanism, of which they were not before aware. Objects of comfort, of necessity, and luxury, ingenious models and skilled contrivances, led to others, or it may be, in some cases, to imitations and improvements.

Since then there have been exhibitions on a larger or smaller scale at New York, Munich, Paris, Brussels, Rome, Florence, and in many of the French departmental towns.

The official and jury reports on the London, New York, and Paris International Exhibitions, by eminent men, have been exceedingly valuable.

The extension of the principle of industrial exhibitions, even on a small scale, to Foreign countries and to our own Colonies, has been attended with many advantages, in promoting improved cultivation, manufactures, chemical and scientific researches, and art education.

To Great Britain, the International Exhibition of 1851 certainly opened a wider range of customers from the more intimate appreciation that followed of the quality and cheapness of the manufactures she produces. Instead of being flooded, as was anticipated, with cheap foreign goods, a greater vent for British manufactures has been afforded in the last ten years than in any former period. In every direction our foreign trade has more than doubled. To South America our exports have risen from £6,000,000 in value to 12½ millions; to China, from under one million to nearly three; to African States, in about the same ratio; to the North American Republic, from under 15 millions to £21,613,000; to the States of Europe, from £25,200,000 to £46,000,000. And as regards the Continent, and, indeed, most other quarters, it is those very nations which took a most active part in the Great Exhibition of 1851, that show the greatest increase, and have become our best customers, such as France, Prussia, Russia, Holland, Germany, and Turkey. Our general trade has doubled. The real value of the external trade of the kingdom (imports and exports) last year reached the large sum of £376,319,296, of which £210,648,643 was for imports. The extension of commercial relations with various countries, and a more thorough knowledge of our productive resources, and the quality of our manufactures, by foreigners, has had much to do with this increase. And, certainly, the British exhibitors will, I think, be able to show next year that there has been no retrogression; that science and skill have been largely developed, and that even the art education of our workmen has not been neglected, thanks to the labours of the Department of Science and Art.

The declared value of our exports to the foreign countries which took part in the Exhibition of 1851 was, for 1850, £47,081,205. The value of the imports was not computed at that time, and it is therefore impossible to give it. The real value of our aggregate trade last year (imports and exports), carried on with the countries which have announced their intention of being represented at the International Exhibition of 1862, was £287,000,000.

The total declared value of our exports to foreign countries in 1850 was £52,739,246, and in 1860, £117,988,399. Although it cannot be assumed that this immense progress is entirely attributable to the better appreciation of our wares by Foreign countries, and the new markets opened up to our manufactures by the Great Exhibition of 1851, yet I think it will not be denied that great benefits resulted from the interchange of ideas in 1851. Our friendly relations with many of the nations of Europe have been more closely cemented. In Hyde-park and in the Champs Elysées we demonstrated what we could do in the way of excellence and cheapness. Enterprise has been stimulated—Commerce extended; our principal manufactures have enormously increased; steam and sail have carried the products of our industry into regions before unopened to trade.

These, and many other points, were so well put by Mr. Hawes in his paper on the Exhibition, at the close of last session, and by the Chairman in his opening address at the last meeting, that I need not dwell further on them.

I have drawn up, for the information of the members, two tables, showing all the Foreign countries that took part in the Exhibition of 1851, and all those that intend to be represented next year; and the comparison will be found interesting, as marking the progress of interest manifested, the remarkable advances of many of these countries, and also the political changes which have taken place in some of these States.

STATES REPRESENTED AT THE GREAT EXHIBITION IN 1851.

	Space occupied. Feet.	Declared Value of Exports of British and Irish Produce and Manufactures in 1850.	No. of Exhibitors.
EUROPE—AUSTRIA.. *Empire.*	13,946	607,755	750
ZOLLVEREIN STATES.			
Prussia ... ... *Kingdom.*	14,755	424,480	897
Bavaria ... ... „	1,074	...	102
Saxony ... ... „	4,253	...	188
Wurtemburg ... „	1,735	...	110
Baden ... ... *Grand Duchy.*	...	...	...
Hesse ... ... „	832	...	86
Saxe Weimar ... „	...	...	...
Luxembourg... ... „	26	...	6
Hesse ... ...*Electorate.*	...	...	229
Brunswick ... ... *Duchy.*	...	...	...
Nassau ... ... „	107	...	13
Saxe Altenbourg ... „	...	...	...
Saxe Meiningen ... „	...	...	...
Saxe Cobourg ... „	..	...	...
Saxe Gotha ... ... „	...	...	...
Anhalt Dessau ... „	...	...	...
Anhalt Koethen ... „	...	...	...
Anhalt Bernbourg „	...	...	7
Frankfort ... ... *City.*	248	...	33
Reuss ... ... *Principality.*	...	...	...
Lippe-Beisterfeld ... „	...	...	5
Schwarzburg-Rudolstadt ... ... „	...	...	...
Schwartzburg-Sondershausen ... „	...	...	...
NORTH GERMANY	1,625		
Hanover ... ...*Kingdom.*	...	231,987	10
Mecklenburg Schwerin ... ... *Grand Duchy.*	...	33,898	10
Mecklenburg Strelitz „	...	...	4
Oldenburg ... ... „	...	11,436	3
HANSE TOWNS—Hamburg	...	6,755,545	123
Lubeck			11
Netherlands ... ...*Kingdom.*	1,133	3,542,632	114
Belgium ... ... „	...	1,136,237	512
France ... ... *Republic.*	...	2,401,956	1,740
Algeria	...	15,069	72
Switzerland ... ... „	3,405	...	278
Papal States	277	222,559	57
Tuscany ... ... *Grand Duchy.*	1,208	769,409	128
Sardinia ... ...*Kingdom.*	1,070	774,512	97
Portugal ... ... „	927	1,076,811	272
Madeira...	...	41,578	2
Spain ... ... „	1,055	926,751	300
Sweden ... ... „	612	151,030	117
Norway ... ... „		211,917	
Denmark ... ... „	268	454,304	53
Russia ... ... *Empire.*	5,490	1,454,771	388
Turkey ... ... „	2,063	3,113,679	1
Greece ... ...*Kingdom.*	359	202,228	62
AFRICA—Egypt. *Vice-royalty.*	460	648,801	1
Tunis ... ... *Dependency.*	1,498	5,128	1
West Coast of Africa	...	641,975	...
ASIA—China (and Hong-Kong) ... *Empire.*	2,375	1,574,145	40
Persia .. ..*Kingdom.*	186	...	10
POLYNESIA. Soc. Islands. *Kingdom*	...	...	2
AMERICA–St. Domingo *Repub.*	...	274,918	1
Brazil ... ... *Empire.*	...	2,544,837	4
Bolivia ... ... *Republic.*	...	...	1
Chile ... ... „	180	1,156,266	1
New Granada ... „	...	330,810	5
Mexico ... ... „	...	451,820	1
United States ... „	12,864	14,891,961	634
		47,081,205	

In the preceding table I have been able to add, from the official returns, the space occupied and the number of exhibitors.

In 1851 there were 6,556 Foreign exhibitors in the thirty classes, who occupied 131,655 feet of horizontal, and 222,832 feet of vertical space, against 7,381 British exhibitors, occupying 207,059 horizontal, and 430,311 vertical feet of space.

Large as the Exhibition building is, on the present occasion, it is quite inadequate to the wants of intending exhibitors. The United Kingdom and the British Colonies could alone have filled it creditably—especially when we remember how important are our own home industries—textile, metallic, mining, engineering, &c.; and when we look at the surprising advance of our various Colonies, and the active exertions they are all making to be creditably represented, as I have of late had frequent occasion to show in the pages of the Society's *Journal*.

Although we have liberally given up a clear half of the building to Foreign countries, and the Commissioners have endeavoured to mete out the available space as fairly as possible among the numerous applicants, the cry is still, "Give—give;" and they are all, like Oliver Twist, asking for more.

The Foreign countries that took part in the Exhibition of 1851 were:—5 empires, 15 kingdoms, 6 principalities and vice-royalties, 8 grand duchies, 9 duchies, 8 republics, 3 free cities, and 1 electorate.

In 1862 the Foreign countries which will be represented in the competitive display will comprise 8 empires, 12 kingdoms, 18 republics, 1 vice-royalty, 1 pontificate, a number of duchies, principalities, and petty states, and 3 free towns.

The first column of the following Table includes the population of its colonies, where the country has any. The second column gives the computed real value of the total imports of merchandise from each Foreign country to the United Kingdom last year. The third column shows the real value of the exports of British and Foreign and Colonial produce to each country named and its Colonies in 1860 (see next page).

There are two other statistical tables which I would submit to the consideration of the meeting, as bearing specially upon the subject under review, these show the course of our Shipping trade with the various Foreign Countries in 1850 and 1860, as evidenced by the entries and clearances of Foreign ships. From these figures it will be seen that while the total tonnage engaged in the Foreign trade with the United Kingdom has doubled in the ten years, Foreign shipping has obtained the largest share of the carrying trade, the aggregate tonnage (entries and clearances), in round numbers, having advanced as follows:—British shipping, from 8,000,000 to 14,000,000; foreign shipping, from 4,000,000 to 10,775,000.

Turning first to the Continent of Europe, notwithstanding wars and the many alterations in the boundaries of States, there has been great industrial progress in the last ten years, and many important concessions have been made to the freedom of commerce. Our commercial relations with France are becoming year by year more extended. The Steurverein League has been broken up, and many new States have given in their adhesion to the Germanic Confederation of the Zollverein. The marriage of the Princess Royal to the Crown Prince of Prussia has drawn us into closer connection with Prussia, the chief nation of that Customs' Union. The long struggle for Italian independence has terminated favourably, and the banner of war is replaced by the pennon of peace, and a return to peaceful industries, as evidenced by the recent successful Italian Exhibition. Serfdom has been abolished in Russia, and a more rapid advance in the industrial resources of that great empire may be looked for.

Notwithstanding some interruptions and drawbacks, during the period that has elapsed since the last Exhibition, British commerce has steadily progressed, and widely extended its range of operations. We have entered into new commercial treaties with Russia, France, Morocco, Siam, China, Japan, Nicaragua, and other countries. The European States have also not been slow to avail themselves of the opportunity of extending friendly commercial relations with Foreign powers. Sweden and Denmark have concluded treaties with Persia; Denmark with Siam; Belgium with Peru and the Argentine Confederation; France, Russia, Holland and the United States with Japan; the States of the Zollverein with the Argentine Confederation; China with Russia and North America.

INTERNATIONAL EXHIBITION, 1862.

ALPHABETICAL LIST OF FOREIGN COUNTRIES TO WHICH SPACE HAS BEEN ALLOTTED.

COUNTRY.	Population.	Value of Imports from in 1860.	Value of Exports to in 1860.
Arabia	...	...	...
Belgium ... ... *Kingdom.*	4,671,187	4,070,866	3,964,670
CENTRAL AMERICA:—			
Mexico ... ... *Republic.*	8,137,853	490,221	538,949
Costa Rica ... ,,	135,000	224,909	196,091
Guatemala ... ,,	850,000		
Honduras ... ,,	350,000		
Salvador ... ,,	600,000		
China ... ... *Empire.*	415,000,000	9,323,764	2,915,542
Denmark ... ... *Kingdom.*	2,752,500	2,642,877	1,594,050
Egypt ... ... *Viceroyalty.*	5,125,000	10,352,574	2,598,912
Feejee Islands	...	...	...
France and Algeria *Empire.*	39,500,000	17,895,210	15,759,258
GERMANY:—			
Austria ... ... ,,	35,000,000	986,349	1,488,098
Northern Germany*	1,100,000	7,524,016	13,850,705
Zollverein†	33,543,000	7,920,511	4,846,283
Greece ... ... *Kingdom.*	1,100,000	677,342	374,211
Holland (and Colonies) ,,	18,200,000	8,713,952	10,247,151
Italy ... ... ,,	21,729,000	2,748,525	5,277,720
Japan ... ... *Empire.*	50,000,000	167,511	...
Liberia ... ... *Republic.*	...	...	...
Morocco ... ... *Empire.*	6,000,000	280,424	214,510
Norway ... ... *Kingdom.*	1,500,000	1,160,992	630,773
Persia ... ... ,,	10,000,000	...	31,970
Portugal (and Colonies) ,,	6,349,000	2,281,844	2,225,495
Rome ... ... *Pontificate.*	3,125,000	...	...
Russia ... ... *Empire.*	75,149,000	16,201,498	5,446,879
Sandwich Islands *Kingdom.*	70,000	298	35,373
Siam ... ... ,,	...	75,240	13,556
SOUTH AMERICA:—			
Argentine Confederation *Republics.*	1,200,000	1,101,428	1,820,935
Brazil ... ... *Empire.*	7,700,000	2,269,130	4,571,308
Chile ... ... *Republic.*	1,559,000	2,582,448	1,737,929
Ecuador ... ... ,,	1,041,000	107,033	76,271
New Granadian Confederation ... ... *Republics.*	2,224,000	24,940	854,500
Peru ... ... ,,	2,500,000	2,581,138	1,428,172
Uruguay ... ... ,,	301,000	867,328	944,002
Venezuela ... ... ,,	1,565,000	...	327,357
Spain ... ... *Kingdom.*	21,307,000	8,026,600	5,078,551
Sweden ... ... ,,	3,734,240	3,193,308	940,613
Switzerland ... *Republic.*	2,535,000	...	...
Tunis ... ... *Empire.*	1,000,000	13,954	4,845
Turkey ... ... ,,	35,600,000	3,253,246	5,206,566
Moldavia and Wallachia ...	4,000,000	2,252,242	201,273
United States ... *Republic.*	31,500,000	44,724,312	22,907,681
Western Africa	...	1,776,565	1,145,434
	857,752,780	166,512,595	120,495,633

* The Two Mecklenburgs. Hanse Towns.

† Baden. Bavaria. Brunswick. Frankfort-on-the-Maine. Hanover. Hesse Cassel. Hesse Darmstadt. Nassau. Oldenburg. Prussia. Saxony. Thuringian Union. Wurtemburg.

Very many new foreign ports have been opened to commerce, especially in the East; eight, for instance, in China, besides the concession of the free navigation of the great river Yang-tsi-kiang, seven in Japan, sixteen in Java, two in Sumatra, two in Borneo, several in the Philippines and Moluccas, and four in Hayti. The few statistical facts adduced will serve to show how much has been done in the brief space of ten years. How interesting, then, will it be to take stock next year of the World's progress in developing and utilising the boundless resources of nature, in extending scientific discoveries and manufacturing processes, in improvements in the arts, and in all those elements of national wealth which tend to advance the comforts of man and facilitate commercial intercourse, while they also lead us to reverence the wisdom and beneficence of the great Creator of the universe.

Shipping Trade of Great Britain with Foreign Countries in 1850 and 1860.

1850.—Foreign Trade.

	Entered Inwards.		Cleared Outwards.	
British Vessels.	Ships.	Tons.	Ships.	Tons.
United Kingdom and Colonies	18,728	4,078,544	17,648	3,960,764
Foreign Vessels.				
Russian	354	88,289	295	74,965
Swedish	402	64,732	394	60,917
Norwegian	1,272	218,329	732	113.335
Danish....................	1,787	136,594	1,830	148,669
Prussian	1,088	224,514	929	179,887
Other German States...	2,059	240,256	1,985	225,331
Dutch	1,320	116,410	1,029	124,034
Belgian	220	35,274	208	36,501
French	2,568	156,952	2,542	212,672
Spanish	150	23,717	144	22,611
Portuguese............ .	106	11,682	62	7,414
Italian States............	359	97,515	360	97,693
Other European States	81	23,667	67	19,493
United States............	748	595,191	776	620,034
Other Foreign States. .	7	2,030	10	2,658
Total Foreign	12,521	2,035,152	11,363	1,946,214
Total Brit. & Foreign.	31,249	6,113,696	29,011	5,906,978

1860.—Foreign Trade.

	Entered Inwards.		Cleared Outwards.	
British Vessels.	Ships.	Tons.	Ships.	Tons.
United Kingdom and Colonies	26,489	6,889,009	26,154	7,025,914
Foreign Vessels.				
Russian	479	137,522	496	145,089
Swedish	1,252	210,983	1,473	238,524
Norwegian	3,290	731,924	3,263	724,840
Danish	3,488	344,139	4,210	415,848
Prussian	1,991	471,563	2,142	501,647
Other German States...	3,836	660,713	4,028	680,332
Dutch	1,952	278,798	2,081	288,592
Belgian	340	72,788	269	59.345
French	4,844	460,427	4,569	452,909
Spanish	267	71,828	265	71,008
Portuguese................	159	37,116	155	4,800
Italian States	593	146,122	616	157,292
Other European States	598	190,644	602	192,835
United States............	1,561	1,461,842	1,634	1,519,855
Other Foreign States. .	24	7,367	26	7,677
Total Foreign	24,674	5,283,776	25,829	5,490,593
Total Brit. & Foreign.	51,163	12172785	51,983	12516507

Africa will be much better represented on the present than on the former occasion. Egypt and Tunis again appear in the list, and will no doubt make an equally interesting display. Great attention has been given by the French to the development of the products of Algeria, where there are now 203,000 Europeans. The excellent permanent collection of Algerian products and manufactures in the Palais d'Industrie at Paris, is a proof of the exertions that have been made to draw forth its latent treasures, and hence a very extensive collection may be anticipated from thence in the French department. Large attention has been given to cotton production, and there were upwards of 6,000 acres under culture with this plant a year or two ago. Wool, silk, flax, and other textiles are produced there. Tobacco culture has been greatly stimulated by the offer of the Government to purchase six million kilogrammes annually, and already eight or nine million francs worth of tobacco are shipped. Valuable woods, dyestuffs, and tanning substances also abound.

Morocco will exhibit in 1862, a country with which we now carry on an extensive and increasing trade. The value of the external trade of Morocco has quadrupled in the past ten years. This may be accounted for partly by the introduction of a more liberal system of fiscal administration, the additional confidence felt since the new treaty, and partly by the unusually large demand for cereals, which originated during the Crimean war, and has continued ever since. Wool, silk, hemp, oils, gums, wax, and other raw produce will probably form the bulk of the exhibits.

The French settlements of Senegal and Gaboon will also send many products, and the Portuguese Colonies of Africa will be fully represented. The free African Republic of Liberia has applied for space on this occasion; and although its chief exports are ivory, cam-wood, and palm-oil, yet the miscellaneous products and manufactures of this independent offshoot from American slavery will be watched with interest. The general trade of Western Africa will be also well represented. There is less secresy now manifested as regards the trade, which has been thrown open more generally, and is not now confined to a few large monopolists. In 1851 two or three London merchants only exhibited, now nearly all of them will take a part in the display of native produce and manufactures. To show the advance of legitimate trade on the West Coast, I may mention that the import of the chief staple (palm oil), to the United Kingdom alone, has increased from 21,722 tons in 1850, to 37,704 tons in 1860. The cotton progress of Western Africa is an interesting feature. In 1850 we received but 258lb. from thence; in 1860 2,069 cwt. So with ebony, and many other valuable woods. The scientific labours of Dr. Baikie, R.N., and Mr. Barter, up the Niger and its tributaries; of Mr. Gustaf Mann, in the Gaboon; and of Dr. Livingstone, in the Zambesi district, will also have developed much that is important and interesting in Central and Western Africa; while through Natal we shall receive wool and other African products from the Dutch settlements of the Orange River territory and the Transvaal State. Even from Madagascar there is a prospect of contributions under the rule of the new king, as Mauritius has sent a deputation, including several men of science. The African Aid Society, with Lord Alfred Churchill at its head, the African Steam Company, and many leading African merchants of London, are actively at work in obtaining a due representation of African products and manufactures.

North America, which showed to advantage in 1851, intends to be represented notwithstanding the deplorable internecine war. The Commission appointed by the President of the United States, under the authority of Congress, comprises a commissioner from each of the six States of Massachusetts, Connecticut, New York, Ohio, Maryland, and Pennsylvania, and also names agents who are to receive goods in Wisconsin, Illinois, Indiana, Minnesota, Iowa, Michigan, and California. The Executive Committee, which sits at Washington, includes the Hon. Edward Everett and the following officials:—The Secretary of State, the Secretary of the Interior, the Secretary of the Smithsonian Institution, the Superintendent of the Census, the Mayor of Washington, and the Secretary of the New York

State Agricultural Society. A government vessel is to bring over the goods.

Mexico had also announced its intention to represent its industry, but the present war proceedings will probably interrupt this. The Central American republics of Costa Rica, Guatemala, Honduras, and San Salvador, have also had space allotted them. The chief articles which furnish the exportable wealth of Central America are indigo, cochineal, coffee, cotton, sugar, hides, Nicaragua wood, balsams, sarsaparilla, tobacco, mahogany, &c. Passing southwards, we find next several of the States of the New Granada Confederation making busy preparations. Venezuela and Ecuador are also among the applicants. Bolivia does not show on the present occasion, and Paraguay is also out of the list; but Brazil, Chile, Peru, the Argentine Confederation, and Uruguay, complete the list of South American States that will exhibit.

In Brazil a local exhibition of raw products and manufactures was announced to be held in the capital of each of the twenty provinces of the empire, and the best of these products was to be sent to a metropolitan exhibition to be held at Rio Janeiro, in December. A choice collection would then be made by the Brazilian Commission, to be transmitted to London, and looking at the range of climate, great extent of country embraced, and variety of products, a most interesting display may be anticipated.

Even the Asiatic States have been moved to compete, since we have Arabia and Persia entering the lists with Europe. In 1851 Persia was only represented by a few articles exhibited by a London merchant —now pictures and products will be sent direct from Teheran; and here British commerce is making its way, since our exports to Persia have advanced from £3,000 in value to £32,000.

Passing eastward, we find that Siam has been opened up to British trade since the last Exhibition. Sir John Bowring concluded a new English treaty there in 1855, and my friend, Sir Robert Schomburgk, a gentleman distinguished for his scientific attainments, and his explorations in British Guiana, his valuable "History of Barbados," and other works, has been the Consul-General at Bangkok for the last four years. Sir Robert, who was then Consul for the Dominican Republic, sent to the Exhibition of 1851 a very interesting collection of products from St. Domingo, comprising woods, new starches, vegetable wax, copper and other ores. To show that he still regards with interest these competitive Exhibitions, and desires to develop the indigenous resources, and further the trade of the countries with which he is officially connected, I may state that, in a letter I have received from him, dated Bangkok, August 18, he says:—

"My Dear Mr. Simmonds,—I am making a collection of Siamese raw produce, tissues, fancy works, &c., for next year's Exhibition. Colonel Cavenagh, the governor of Singapore, wrote, wishing me to incorporate the Siamese collection with that of the Straits Settlements, but I should rather like it to be separate. If, therefore, you can keep a space open, I shall place it under your care, and shall be glad if you will accept of it after the Exhibition is over."

The last consular reports of Sir Robert furnish much valuable information as to the trade and resources of that country, and its products are becoming better known in Europe. These embrace rice, sugar, sapan and other dyewoods, dragon's blood, dammer, gamboge, benzoin, sticklac, ground nuts, til seed, cardamoms, fibres, teak, and other useful woods, such as rosewood, satinwood, ebony, and krachi wood. Sir Robert remarks, that a number of woods, the produce of the forests in the interior, might become of importance were their qualities for naval or civil architecture, or as woods proper for ornamental purposes, sufficiently known. Among others he especially mentions a wood called takieng, which, as far as regards size and quality, might become a rival to to teak, possessing, moreover, the great advantage that it can be easily bent by artificial means. He noticed in the king's building-yard a log of this wood, 135 feet long, perfectly sound and without a flaw. Most of the ornamental woods of Siam are entirely unknown to cabinet makers, although their colour and high polish would render them valuable additions to the articles of export.

The King of Siam intends sending articles forward. Siam is a rising and prosperous state with which our trade is likely to become more extensive, if not direct, at least through, the great eastern *entrepot* of Singapore. It is fast increasing its mercantile marine, and now owns upwards of 30,000 tons of shipping, a dozen of the vessels being above 500 tons, and 30 of them steamers; several of the latter have been built at Siam.

The Dutch and Spanish Colonies of the Eastern Seas will no doubt be duly represented. Their numerous productions I dwelt upon at some length in the paper on the "Trade and Commerce of the Eastern Archipelago," which I read to the members last session. The Dutch Colonial Government formed a collection of objects for Paris in 1855 intended to exhibit the natural products and the industry of Java, and the other Dutch islands of the Archipelago. A trophy of boxes, barrels, woods, &c., formed the most conspicuous object in the Annexe, but it was undescribed, and unlabelled except as "musters of various plants." A Borneo Company, with a capital of £200,000, has been recently formed at Amsterdam, to develop the resources of that great island. It is under the patronage of the Dutch government, which takes one-tenth share in the concern.

In 1851 there were two or three specimens of Japanese products incidentally shown, consisting of copper, vegetable wax, varnishes, and coarse silk: but now that the trade has been opened up with that empire there will be a most magnificent collection exhibited.

The treasures of art, nature, and industry of Japan, will, through the efforts of our Minister and Consuls there, be well displayed, and the collection be especially rich in large and fine specimens of porcelain, bronzes, and lacquer-ware, in which the Japanese especially excel, in a way to rival the finest works of the same character in Europe. There will also be a good variety of raw and manufactured commercial products, and Her Majesty will doubtless exhibit the Tycoon's presents, which will serve to illustrate Japanese progress in arms, armour, harness, screens, and other manufactures.

Although China will directly, as a foreign state, take no part in the Exhibition, yet, indirectly, there will be a very interesting collection of products and manufactures of this industrious nation shown, through the Hong-Kong Committee, the consular establishments at the northern ports, and by merchants and others at home. Especially will there be magnificent trophies of the spoils from the Emperor's Summer Palace, in rich silk hangings, gold and velvet embroidered carpets, bronzes and vases, ivory carvings, and such like.

Even the Islands of the Pacific will not be unrepresented. France will exhibit from its oceanic dependencies. Mr. Consul Prichard will send wool, cotton, and other indigenous products of the Feejee islands which are destined to pass under our sovereignty. Captain Denham, R.N., will exhibit articles collected during his survey of the South Sea Islands, in her Majesty's ship *Herald*. The Sandwich Islands, now a flourishing state under the name of the Hawaiian Republic, have had space allotted to them for their products, on the application of their consular agent in London. A very good collection was sent in 1851, but it arrived too late.

Returning now to Europe, France will be, perhaps, the most formidable of the foreign contributors, as the originator and most active promoter of these Exhibitions, and because ample funds will be placed at the disposal of the Commission. Already £50,000 has been voted for expenses, and fully as much more will probably be expended. Great Britain spent only £40,000 in the expenses attendant on forwarding British and colonial goods for exhibition at

Paris in 1855. There were 1,700 French exhibitors at London in 1851, and 2,500 English exhibitors at Paris in 1855. Although she has received the lion's share of space, France is reported to be dissatisfied with her allotment. Something like 132,000 square feet has, I believe, been assigned to our neighbour, against 119,000 feet in 1851; but in these details I must be understood not to speak with any official precision, as the exact apportionment has scarcely yet transpired. There have been nearly 9,000 French applicants for exhibiting space on this occasion, of whom 5,000 were from the Departments, 3,200 from Paris, and the remainder from Algeria. These, however, have been gradually reduced down to about 3,500. There is one satisfactory feature with regard to the French department, and that is that the exhibitors are likely to be ready in time on the present occasion, instead of being about two months in arrear as in 1851 and 1855.

The Emperor Napoleon expressed the strongest wish to send over the most celebrated pictures from the Louvre for the Fine Arts Department, and when he found that the early closing of the lists, and the large applications for space prevented their being received, he determined to hang the walls of the French Department at least with some of the finest paintings. Among the pictures coming from France will be that of the Battle of Solferino, by Horace Vernet.

With the space at her command, and the energy, skill, and funds necessary for the purpose, France will, no doubt, make a most creditable home and colonial display. She will gather together the best and most varied specimens from her numerous outlying dependencies, which, exclusive of Algeria, contain a population of one million souls; from her Pacific possessions, the Marquesas, Society Islands, and New Caledonia; from her Indian dependencies, Cochin China, and Reunion; from her African settlements, and from her American Colonies, Guiana, Guadaloupe, Martinique, St. Pierre and Miquelon.

The States of the Zollverein that exhibited in 1851 were 25 in number, namely, the kingdoms of Prussia, Bavaria, Saxony, and Wurtemburg, the Grand Duchies of Baden, Hesse, Saxe-Weimar, and Luxembourg, Electoral Hesse, the Duchies of Brunswick, Nassau, Saxe-Altenburg, Saxe Meiningen, Saxe Cobourg, Saxe Gotha, Anhalt-Dessau, Anhalt Kœthen, Anhalt Bernburg, the City of Frankfort, Principalities of Reuss, elder and younger, Lippe-Biesterfeld, Schwarzburg-Rudolstadt, and Schwarzburg-Sondershausen.

In 1854 the second of the quinquennial exhibitions of the produce and manufactures of the States composing the German Customs Union was held at Munich, and a report thereon, by Mr. Consul-General Ward, was published in the 3rd vol. of the Society's *Journal*.

Austria (whose commercial relations with the Union had been drawn closer by the treaty of February, 1853), as well as the several States in the North which are not members of the Union, were invited to contribute. This proposal was accepted by Austria, the Principality of Lichtenstein, the Hanseatic Towns, and the Grand Duchy of Mecklenburg-Strelitz, but Mecklenburg-Schwerin did not exhibit. Of the 33 contributing States 26 were members of the Customs Union. The only foreign countries which took part were the non-German dominions of Austria, it being contrary to the principles of the German Customs Union to invite foreign countries generally.

There were about 7,000 exhibitors, of whom 2,200 were in textile manufactures, 1,100 in metal manufactures, and 800 in porcelain, glass, &c. According to Mr. Ward's report, "This exhibition was rather a display of the industrial powers of Southern Germany than of those of the entire country. Austria was glad to seize the opportunity of taking part for the first time in an exhibition of industry of the German Customs Union. She made great exertions to be well represented, and was not altogether unsuccessful. The Austrian Government, which ardently desires the incorporation of the whole of Germany into a General Customs Union, was desirous of showing that the Austrian manufacturers were making steady progress, and were, in some respects, already qualified to compete with the industry of the North and West."

The textile manufactures, Mr. Ward considered, had not made much progress. In machinery, and the working of metallic substances, there were more signs of improvement, and in articles of an artistic character, whether belonging to the department of the Fine Arts, or of a mixed nature, combining beauty of form with subserviency to practical utility, there were many models well worthy of our notice and imitation.

The production of fine wools in Germany seems to be on the decline, partly, perhaps, owing to the increasing importation of the wools of Australia into Europe. The entire stock of sheep in the States of the German Union is scarcely more now than it was twenty years ago, being set down at 22,000,000 head, a number nearly equalled by the British colonies in Australia, and from whence we are at present supplied with about 60,000,000lbs. of colonial wool annually. The woollen manufacture is undoubtedly still one of the most flourishing branches of German industry. Wool has, in many articles, taken the place of cotton for female dresses, light woollens and worsteds being generally preferred.

From the commonest blankets to the finest cassimeres and woollen velvets, specimens were displayed at Munich, and the Austrian broadcloths from Bohemia and Moravia gave evidence of having arrived at a high degree of perfection. The Austrian velvets, plush, and embroidered stuffs, were generally good, but in plain silks and ribbons she stood below the Zollverein. A silver table service, made for the Crown Prince of Saxony, from the designs of Professor Reitschel, possessed much artistic merit. The marbles, porphyries, and mosaics formed some of the most striking objects of the Exhibition, and in many of them a great deal of artistic beauty was observable. The Great Exhibition of 1851 gave Germany the spur in some branches of her industry, and the French Exhibition in 1855 had a similar effect.

In Prussia, there are already about 500 intending exhibitors announced as prepared to take part in sending contributions. The pictures from the Royal Palace will alone occupy 1,000 feet in the Fine Arts Gallery, and the magnificent service of plate presented by the City of Berlin to the Crown Prince on his marriage, will form an attractive feature. The "true and veritable" manufacturer of eau de Cologne, M. Jean Maria Farina, intends keeping a fountain of this perfume playing during the whole term of the Exhibition, no doubt to the great delectation of the ladies. Recently, the Secretary of the Prussian Legation, and two of the Prussian Commissioners, have had personal interviews with Her Majesty's Commissioners, arranging details and announcing results accomplished.

The States of Northern Germany, not belonging to the Zollverein, which took part in the Great Exhibition of 1851, were the kingdom of Hanover, the Grand Duchies of Oldenberg, Mecklenberg-Schwerin, and Mecklenburg-Strelitz, the Duchy of Holstein, and the free cities of Hamburg and Lubeck.

The President of the Polytechnic Society of Leipsic has issued a circular to the Governments of Germany, earnestly entreating that measures may be taken for causing the productions of the country to be properly represented in 1862. Kaulbach's royal portraits, and the bronzes and medals from Hanover, will possess considerable interest.

The empire of Austria will be represented by about 1,800 exhibitors, from Austria Proper, Hungary, Croatia, and Transylvania. Austria will be particularly strong in agricultural and mineral products. The Commune of Vienna has voted 10,000 florins to assist such exhibitors as are not able to defray the transmission charges. The Emperor will send the best fine art treasures from all his palaces, to Paris he only sent those from the Belvedere. The oil paintings will date from 1784, commencing with the works of the great master, Heinrich Fuger.

In the Belgian Decree of April last, appointing the Royal Commissioners, it was stated, that taking into consideration that the Exhibition of 1851 entailed an outlay on Belgium of nearly £7,000, though it was not open to every branch of art which will be represented at the forthcoming Exhibition; and being fully persuaded that the Belgian exhibitors on the present occasion will be much more numerous than was the case either in 1851 or even in 1855, the Commission recommend that the sum of £9,000 should be applied for from the Government, to defray the necessary expenses, &c. This amount was granted. The Duke of Brabant accepted the honorary presidency of the Commission, which is one of the most extensive and influential of any yet nominated. Circulars were addressed, in May, by the Secretary of the Minister of the Interior to all the Chambers of Commerce, requesting their cordial support; and to the principal artists in the country, inviting them to contribute a choice selection of their works, which are to date from the year 1830. The King has consented to lend all the Royal pictures. The President of the Commission and the London Commissioners had an interview with Her Majesty's Commissioners, a few days ago, reporting progress.

In Austria, Local Committees, assisted by the Presidents of the various Chambers of Commerce, have been formed for the purpose of stimulating the manufacturers, and to select the articles of proposed exhibitors. Every facility is also to be afforded on the Government lines of railway, for the transmission of goods at a reduced scale of charges.

The British Consul-General at Leipzig, states that the British trade with Germany has very much increased of late years, especially in cotton and linen yarns and stuffs, and pig and bar iron. Mr. Koch, our Consul at Frankfort, under date September 29, 1859, observes:—"Intelligent travellers who have not visited Southern Germany for a number of years, must now be forcibly struck with the increased activity, industry, and commercial intelligence of the population. The increased facility and economy of intercourse, which enables thousands of Germans to travel and visit other countries, has mainly contributed to expand their ideas. Of the numberless Germans who visited the Great London Exhibition of the year 1851, the greatest proportion brought home the most favourable impressions of England generally, and of the enterprise and high intelligence of the British merchants and manufacturers, and they have profited by what they have seen. Prussia, in introducing the Zollverein, has certainly the merit of having thereby mainly contributed to the national prosperity of Germany."

From Russia there will be many rare and remarkable objects, such as porphyry candelabras and columns, jasper cups of gigantic size, large mosaics, malachite articles, and some picturesque and interesting trophies. The Emperor will contribute the best of his pictures from the Hermitage and the Winter Palace. Russia will no doubt stand well with its iron and steel manufactures, for which it received a Council Medal in 1851. Many of the articles intended for exhibition have already arrived, as they had to be dispatched from the Baltic before the navigation closed. The International Exhibition is said to form the general subject of conversation in the higher circles, while it occupies equal interest among the workmen and students.

The kingdom of Denmark intends to contribute largely, both from Denmark Proper, the Duchies, and her Colonies.

In Spain, an Exhibition of Industry was announced to be held in Madrid next year, confined to the products of Spain, Portugal, and the American republics of Spanish origin. This will probably now be postponed, as preparations are making to transmit a creditable collection to the International Exhibition. The Duke de Veragua is President of the Local Commission, the Minister of Public Works is actively occupied in the matter, and Commissioners have been sent by the Government into all the provinces urging the various manufacturers to forward something to the Exhibition. Seville is going to send a good many articles.

Portugal is working hard, the King Regent being the President of the Commission.

The Roman collection of 1851 was principally interesting for its sculptures, cameos, and mosaic work. In 1859, there was an Exhibition of Industrial Products at Rome. On the present occasion but little was anticipated from the Roman State, but very recently an announcement has been made that the products from the Pontificate will require a space of 3,000 feet; that a Commission has been appointed to assist the Ministers of Commerce and of Public Works in selecting the objects to be sent; and that the charges of transmission and of insurance will be met by the government.

United Italy, now numbering a population of 22,000,000, intends to make a noble display, especially in the fine arts department; indeed, its application for hanging space was for about one-tenth of the whole at the disposal of the committee. The Institute of Fine Arts in Naples undertakes the reception of works intended for exhibition from the Neapolitan Provinces. The pictures to be sent will date from 1784, recording the revival of Italian art by Canova. The Italian Commission is a most numerous and influential one, embracing all the present and past Ministers of State and officials. Among other objects in the Italian court will be a magnificent display of silks and velvet.

Turkey, which has been a little dilatory in applying, now comes in and wants much more than the space that can be allotted to her.

Thus much for the movement in the principal countries intending to compete.

In the words of Mr. H. Cole, C.B., in his report on the Paris Exhibition, "An extended knowledge of the nature and capacities of production peculiar to each country, is the first and most obvious result of International Exhibitions. This knowledge is spread not merely from nation to nation, but most usefully between the producer and consumer, establishing a direct connection between the two. So long as the United Kingdom enjoys its present advantages in possessing great mineral resources, as well as those facilities of transport which arise from its insular position, and the physical energy of its people does not decline, it would seem to follow that no result but a highly beneficial one would ensue from that extensive publicity of its productions which is conferred by these exhibitions.

"International Exhibitions will extend and hasten the development of the productive industry of all nations, but they are not likely to counteract those natural laws which are regulated by the climate, the physical condition, and even the political institutions of each. Almost every nation has something peculiar to itself which is useful to another, and it is the increased ease of interchange which International Exhibitions chiefly promote. Looking to their influence on this country, International Exhibitions may be said to have been of eminent use. They have created both an earnest wish for the better education of all classes, and even, perhaps, an exaggerated dread of being outdone by other countries, but at the same time a firm resolution to advance.

"Almost every branch of national industry has shown progressive improvement since 1851, and notwithstanding greatly increased taxation, the general commerce of the kingdom has made enormous strides since that year, which, in some measure, ought to be attributed to the two International Exhibitions which have taken place. It seems, therefore, to be a conclusion which cannot be gainsaid, that these Exhibitions have both amply repaid the United Kingdom for the exertions and outlay which have been made."

Finally, I may observe that, by the original programme, the members were to have had under consideration this evening "A Comparison of the years 1851 and 1861." You have had laid before you instead our commercial progress from 1850 to 1860, as regards Foreign countries and

Foreign shipping, 1851 and 1861 being exceptional years, which can scarcely be fairly contrasted, even were the statistical returns for the present year complete; and moreover the subject has been pre-engaged. I have, however, opened to you a few pages from the national ledger, which will serve to show what has been the industrial progress at home, and I have also told you something of what has been done abroad. I have gone over the foreign data of the Exhibition of 1851, endeavoured to trace some of its results, and shadowed forth in outline the steps already taken by the principal countries in order to be fitly represented in the forthcoming Exhibition. To have done this fully for all would have been impossible in the time allotted here. But I trust it has enabled the members to obtain some little insight into the great exertions making, and that it will lead to much additional information being furnished in the course of the discussion, by many who are much better informed on special details than I can be.

It results from the course of our inquiry that we shall have represented next year in London the best products, art, and industry of Foreign Countries, having an aggregate population of over 900 millions of people, besides evidences of the scientific research, taste, manufactures, industry, and wealth of the large population of the United Kingdom and its dependencies. The contributions from foreign countries will be far more extensive and universal than in 1851, and the countries unrepresented will be very few and unimportant. That the International Exhibition of 1862 will be a great success, is now beyond a doubt. Everything thus far has tended to favour it. Foreign governments and private exhibitors have extended to the undertaking the warmest support, honorary and pecuniary, and all have worked zealously, energetically, and systematically.

The results of these collective and combined endeavours cannot fail to be advantageous hereafter to Great Britain and the world at large.

DISCUSSION.

The CHAIRMAN, in inviting discussion, said he saw at the table one of the Vice-Presidents who had recently returned from Florence, where he had been representing the Society, at the request of the Council, and he (the Chairman) hoped he would be induced to favour the Society with a few remarks.

Mr. WINKWORTH said that he cheerfully responded to the invitation of the Chairman, but as he had only arrived in London the previous day, he feared that anything he could say on the subject before the meeting would be of rather a miscellaneous than concise character. He had accepted the invitation of the Council to become one of a deputation to the Florence Exhibition, and had been appointed to report specially on the department in which his previous experience as juror and reporter in 1851 and 1855, might be supposed to have in some measure qualified him, viz., silk, raw, thrown, and manufactured. In the discharge of the duty thus entrusted to him, he was brought into juxtaposition with many jurors and others competent to assist him, and the circumstances to which he had just alluded gave him a position of which he was not slow to avail himself. The results of his mission he should take occasion to embody in a report to the Council, as soon as he was able to arrange the materials he had collected. In the meantime, it would be agreeable to them to know that Mr. Simmonds (who never touched upon any subject, whether at a long or a short notice, without exhausting it, much to the advantage of those who heard him) had by no means exaggerated the expectations that had been formed as to the manner in which foreign countries, especially those of France and Italy, would respond to the invitations given to them. He had had the opportunity, within the last few days, whilst in Paris, of consulting with some of the most eminent dealers in silk goods, and he knew it was the intention of the manufacturers of Lyons and St. Etienne, not only to exhibit largely, but to exhibit more specially than they had done before. They knew that in the Exhibition of 1851, many silk goods were exhibited which had, in fact, been manufactured some years previously, and were culled from the best specimens they had been able to produce in that country; but on the ensuing occasion they intended to exhibit their very latest and best productions. In point of fact, this they must do, for the late commercial treaty would expose them to a measure of competition with English silks which they had not experienced before, but which he hoped they would find to be really a trial of skill as producers, in which, paradoxical as it might appear, both parties would be gainers. The truth was there were classes of goods which they could produce with greater facility and excellence than could be done in this country. On the other hand, they had candidly admitted that they had no conception we could produce anything so well made as many of the specimens he had shown them from England. To go back to Italy, without anticipating what his friends Mr. Digby Wyatt and Mr. Foster might have to say of the departments on which they had undertaken to report, he might state that the Exhibition at Florence was a highly creditable one, considering it was purely national, and that it was the first attempt of a new nation which had been heretofore split into small and separate governments, in many instances fettered by vexatious fiscal impediments, which had, of course, exercised a deleterious influence over their productions. It was now a large and almost complete kingdom, and considering they had only three months' notice that this National Exhibition was to be opened, they had collected a most creditable display of their ability as producers, but which, as far as time would permit, would be surpassed by the specimens they intended to send over to this country next year. In the department of silk, raw and thrown, the Exhibition at Florence far excelled those of 1851 and 1855; and they had told him that on the ensuing occasion their display would be greater in quantity, and, if possible, better even in quality. He might add that there were one or two departments of manufactures in Italy in which they had exhibited considerable progress, and from which they intended to make a selection for the Exhibition in this country next year. These were particularly sculpture and mosaics. With respect to the statistics to which Mr. Simmonds had drawn their attention, they knew that the kingdom of Italy being really a new one, it was very difficult to obtain correct figures and details, but, as far as practicable, Mr. Simmonds appeared to have obtained correct information and to have made good use of it. He had only to say, in conclusion, that altogether he must confirm, as far as his opportunities of observation and information went, the opinion which Mr. Simmonds had so well expressed, viz., that the ensuing display of progress made in Arts, Manufactures, and Commerce, since 1851, would fully justify the Society in the measures they had successfully adopted to inaugurate another International Exhibition.

The CHAIRMAN said it had been intimated to him that there were probably some gentlemen present representing foreign countries as Commissioners for the Exhibition. If there were he should not only be glad to hear their remarks, but also to hold out to them the right-hand of fellowship on this occasion.

Mr. MANLY HOPKINS (Commissioner for the Sandwich Islands) said the king of the country which he had the honour to represent had warmly responded to the call to contribute to the forthcoming Exhibition. That country had recently undergone a transition, and had been thrown very much upon its own natural resources. Amongst its products he had no doubt would be exhibited sugar and coffee as fine as were produced in any part of the world. They would also exhibit a new description of lichen, which was now used in the States for the purpose of making stuffing for bedding and pillows, and which he believed would eventually be used for those purposes in this country. The people of the Sandwich Islands were now growing wool, but their manufactures at present were few and small. They were, however, a nation bursting rapidly into civilized life, and accepted all European traditions of civilization very readily indeed. He hoped in the course of a few months to produce a volume on the subject of the Sandwich Islands, which he believed would throw some light upon the history of a people of whom hitherto very little had been known, and who had been lost sight of in the great mass of mankind. He added that with a view to the improvement of the breed of sheep in that country, the Emperor of the French had sent out four of his beautiful flock as a present to the king.

Mr. Hemming (Commissioner for Venezuela) said, at the present moment he could add but little to the information which had been given in the paper with respect to Venezuela. From the time when the notices were first issued by Her Majesty's commissioners, inviting foreign countries to contribute to the Exhibition, he had urged upon the government of Venezuela, the necessity of sending, as far as they could, the best samples of the various productions of the country, many of which they had in great perfection. The meeting was no doubt aware, that for a long time past, that part of the world had been politically in a disturbed state, which had prevented exertions being made to develope the resources of the country; but in a letter which he had received by the last mail from the foreign secretary, a hope was expressed that they were so far settling down, that they would be able to give some attention to the carrying out of these objects, which he had no doubt would advance the commercial intercourse between that country and England. There was one subject which was at the present moment of universal interest—that was the growth of cotton. It had long been known that Venezuela produced some of the finest cotton in the world; but in proportion as progress was made in the cultivation of cotton in the Southern States of America, so much capital being embarked there and machinery imported, in like proportion were the cotton growers of Venezuela discouraged, not possessing such advantages, and the result had been that for some years past they had given their attention more to the cultivation of coffee, cocoa, and sugar, all of which they produced in the greatest perfection. It happened, however, that the exports of those commodities had been principally to Spain and Hamburg, and he had had little opportunity of judging of their quality in this country. In April last he sent to Venezuela a list of productions for which that country was most famous, urging them to send over samples, and assuring them that, to the best of his humble abilities, they should be properly displayed in the approaching Exhibition. He was quite convinced that, with the favourable climate and great fertility of the soil of that country, a large number of products likely to attract favourable notice here would be sent. At the present time they were large customers to England; and in a period of three months they took from Liverpool manufactured goods to the amount of 600,000 dollars, without having returned to this country a shilling's-worth of the productions of their own soil. His great object was, that there should be an interchange of their valuable productions in return for the manufactured goods which they took from England; and if they sent us cotton and took back our manufactures, it would be an immense advantage to both countries.

The Chairman remarked that it was of great importance that they should send samples of their cotton.

Mr. Hemming added that he had obtained samples of the latest exportations of cotton from Venezuela to Hamburg. At a time when the cotton of Louisiana was bringing 6½d. per pound, that from Venezuela was fetching 7d. per pound. The merchant by whom the cotton was shipped had told him this article paid him better than any other description of goods he exported.

Mr. Gerald Ralston (Commissioner for Liberia) anticipated that a goodly number of articles would be sent from the country which he represented. He was happy to say the English Government had favoured them by ordering the Royal Mail steamer to call there in January to bring over the articles for the Exhibition in May. Those articles would consist of coffee, sugar, camwood, ivory, gold dust, cotton, ground nuts, and a great many other productions, and he believed the specimens of cotton exhibited would not be the least interesting amongst them. Mr. Thomas Clegg, of Manchester, who had devoted so much attentien to the procuring of cotton on the West Coast of Africa, had informed him that the specimens sent from Liberia to the Cotton Supply Association of Manchester were decidedly excellent, and were better than any received from the Southern States of America, excepting the Sea Island cotton. Unfortunately the Liberians had not hitherto devoted themselves to the production of cotton, because they had found it more profitable to cultivate sugar. But he thought it would be worth their while to devote more attention to cotton, and he had no doubt their exports of that article would soon be very largely increased.

Mr. Morgan said he did not come within the category of those who had previously addressed the meeting, as the official representative of any foreign country, although he aspired to represent every one of them. He had set on foot a scheme to assist the exhibitors in the foreign departments, and he fully endorsed all that had fallen from Mr. Simmonds that evening. What that gentleman had stated was, no doubt, in a great measure derived from official sources, whilst his (Mr. Morgan's) information was obtained from private sources. He had sent out representatives to Spain, Portugal, France, and British North America, and another was just about to start for Berlin; and from all the information he had received, he quite coincided with the statements Mr. Simmonds had made. Not having been present during the reading of the early part of the paper he was not aware whether Mr. Simmonds had referred to the fact that there was an intention on the part of the French workpeople to visit the Exhibition in large numbers. When he was last in Paris, measures were being taken for organising the visit of large numbers of the *ouvriers* of that city. He believed there would be no difficulty in effecting that, but the difficulty would be in providing for such masses of people when they arrived. It had been matter of discussion in this room that there should be a reduction in the entrance fee to the Exhibition to the working classes, and he hoped that subject would not be lost sight of. With regard to Canada, it appeared from the latest letters he had received, that nothing definite had yet been done there with regard to contributions to the Exhibition. The authorities had refused to advance any money towards the fund. Private exhibitors were anxious to come forward, but were holding back to hear the ultimate decision of the government with regard to the aid they would grant in promoting this object.

The Chairman said upon him now devolved the easy and grateful task of moving a vote of thanks to Mr. Simmonds for the facts so industriously collected, and he believed so accurately laid before them—facts which would not cease to be of value when this meeting terminated, but which they would afterwards consult in print with satisfaction, and he had no doubt with profit. Mr. Simmonds had made one remark, which was at the bottom of the whole of the case—that was that it was for the interest of every country to communicate and transact business with every other country; that each country produced something peculiar to itself and valuable in its nature, which it could exchange with other countries with profit to both. There were some countries on the earth which had been peculiarly the fields or theatres of the great wars that had taken place—the Netherlands might be mentioned as one instance. It happened at the present time to be the good fortune of happy England to be the battle-field of peace—to be the spot on which the nations of the earth were to assemble to display their rival productions and to compete in bloodless contests for the laurels of industry. It was, he apprehended, a great source of happiness to every reflecting Englishman that their country should, under the favour of Heaven, be the chosen spot for such an exhibition, and there was one nation in particular on the face of the earth—the nation of Italy, which England would be especially happy at the present moment to hail as a sister in the works of art, science, and manufactures. That every country might assemble among them with its productions, that every country which came might profit itself — for we should certainly gain no exclusive advantages—that they might all reap benefit from this exhibition of industrial talent and art, was his most sincere wish, in which he was sure all present would join, as they would also join in permitting him to convey their best thanks to Mr. Simmonds for the very able and valuable paper with which he had favoured them that evening.

Mr. Murchison seconded the vote of thanks. He said they were accustomed to hear that it was an ill-wind that blew nobody good; and if there was one fact more prominent than another in the paper read and in the discussion, it was this—that more countries than one were prepared to send us cotton of superior quality.

The vote of thanks having been passed,

The Secretary announced that on Wednesday evening next, the 4th December, a Paper by Captain William C. Phillpotts, R.E., "On the Building for the International Exhibition of 1862," would be read.

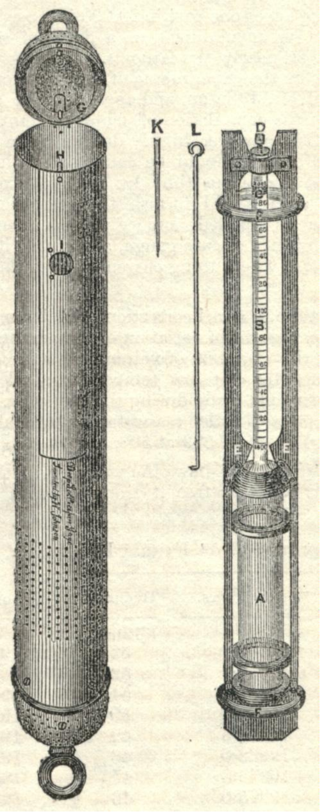
JOHNSON'S DEEP-SEA PRESSURE-GAUGE.

In very deep soundings the pressure of the water is too great to admit of its measurement, except by the use of a body possessing a very slight degree of elasticity.

Mr. Canton, in the year 1761, communicated his observations on the compression of water, which he found to be one part in 21·740, under the pressure of one atmosphere, and in water placed under a receiver, he found an expansion of the same amount, when the air in the receiver was exhausted. Mr. Perkins found a diminution of $\frac{6}{100}$ths of the bulk of water under 1,120 atmospheres; that is, about one part in 19,000 for one atmosphere. Water, therefore, possessing this slight degree of elasticity, appears well adapted to determine its pressure at great depths. It is well known that a cork fitted into the neck of a bottle, and lowered in water, will be driven into the body of the bottle if the depth be sufficient; or, if of less depth, that it will be driven down a certain distance, according to the depth to which it is lowered, and that it will as gradually ascend to its original position on being raised to the surface. A gauge made of metal was exhibited last year at the Society of Arts Exhibition of Inventions, and at the meeting of the British Association, reference then being made to the use of glass to vary the experiments, as with metal it is impossible to see when the instrument is free from air bubbles. Mr. Johnson, therefore, had prepared one of glass, which was exhibited by Mr. Glaisher, in Section A, at the last meeting at Manchester.

The instrument now figured is of glass entirely; it consists of a cylindrical glass vessel, with a finely gradulated long stem or neck, within which is placed an elastic ring and an elastic stopper; the latter in action pushes the former down the stem, and leaves it at its lowest depression, where it remains acting as an index, whilst the stopper itself again ascends the stem.

In the cut, A is the cylinder; B, stem with gradual scale; C, flat elastic ring or index; D, elastic stopper; E, metal frame lined with caoutchouc; F, caoutchouc rings, protecting gauge from concussion; G, caoutchouc rings at top and bottom of case, securing the frame in position; H, metal hook on door, securing the top of case; I, clasp to door, let in to avoid projection; K, "vent" or grooved needle, inserted with stopper; L, brass hook, used to draw up elastic ring.



Some few precautions are necessary to be attended to before use, viz., the vessel must be well rinsed with boiled water, for the purpose of preventing the adhesion of air to its inner surface; next it must be filled with sea-water which has been boiled, and thus freed from air, to exclude all air from the entire vessel and stem.

In this state it is ready for use, and the first step to be taken is to insert the elastic ring and the stopper, with a small grooved needle by its side, thus reserving a small opening for the escape of superfluous water, pressing the stopper so far down the stem, that its lower edge and the first or zero line (marked 2000) on the scale are coincident—then withdraw the grooved needle, and the elastic stopper will tightly fit the stem. To prevent excessive friction of the stopper, it should be slightly lubricated occasionally.

On lowering the gauge into water of greater pressure or density than that of the water contained within it, the latter is compressed till it is of the same density as the water by which it is surrounded, and the elastic stopper is pressed down the stem towards the cylinder, at the same time pushing the elastic ring before it. On raising the gauge from water of greater to water of less density, the water contained within the gauge expands, and the elastic stopper is gradually pressed upwards, leaving the elastic ring behind. On arriving at the surface the lower edge of the stopper should be found at zero, and the elastic ring opposite to that division on the graduated stem marking the degree of compression of the water at the greatest

---

See *Journal*, vol. viii., p. 354.

depth to which the instrument has been lowered. This depth should be ascertained by the sounding line, to which, at least for some time, the instrument in each experiment should be attached. The mass of water in the cylinder and stem is considered to be divided into 2,000 parts, of which the stem contains one-tenth or 200 parts; these are numbered from 1,800 to 2,000. Each part on the stem may easily be read to a tenth, or a 20,000th part of the whole.

A compression of one part in 20,000 is caused by a pressure of 15·8 lbs. auvoirdupois, or a depth of sea-water of 35,456 feet, or nearly six fathoms. This result is confirmed both by the experiments of Mr. Canton and Mr. Perkins, and Mr. Johnson, and appears to be a perfectly safe basis for the compilation of tables of comparison and pressure. It is, however, highly desirable that the depths as thus determined, should be compared with those determined at the same time by soundings at different depths, as such would furnish the corrections, if any, necessary to be applied, and give confidence in the indications by the pressure gauge, and enable it to be used with confidence when strong currents render the use of the lead uncertain.

In observation, a small correction will be necessary to be applied on account of variation of temperature, and also for friction; this variation of volume is not uniform, being greater at high than at low temperatures. From many careful experiments made during the past year, it is found that 20,000 parts of boiled sea-water, at 86° Fah., contract to 19·945 at 70°, to 19·899 at 50°, and to 19·880 at 31°.

The following table shows the variation in the volume of sea-water, boiled to free it from air, with change of temperature:—

THERMOMETER 67·5° FAHR. BAROMETER 29·92.

DEGREES.	NO. OF PARTS.	DEGREES.	NO. OF PARTS.
Fahr.		Fahr.	
86°	20000·	53°	19905·0
85	19996·	52	19903·0
84	19992·5	51	19901·0
83	19989·0	50	19899·0
82	19985·5	49	19897·0
81	19982·0	48	19895·0
80	19978·5	47	19894·0
79	19975·0	46	19892·5
78	19971·5	45	19891·0
77	19968·0	44	19890·0
76	19964·7	43	19889·0
75	19961·5	42	19888·0
74	19958·25	41	19886·7
73	19955·0	40	19885·5
72	19951·5	39	19884·5
71	19948·0	38	19883·5
70	19945·0	37	19883·0
69	19942·5	36	19882·5
68	19940·0	35	19882·0
67	19937·5	34	19881·5
66	19935·0	33	19881·0
65	19932·5	32	19880·5
64	19930·0	31	19880·0
63	19927·5	30	19880·0
62	19925·0	29	19880·0
61	19922·5	28*	19880·0
60	19920·0	27	19880·0
59	19917·5	26	19880·0
58	19915·0	25	19880·0
57	19913·0	24	19880·0
56	19911·0	23	19880·0
55	19909·0	22	19880·0
54	19907·0		

* A gentle motion kept up to equalise the temperature of the Sea Water has prevented its freezing at 28·5 deg.

PETROLEUM SPRINGS IN NORTH AMERICA.

By Dr. A. GESNER, F.G.S.

In a paper read before the Geological Society, on the 6th November, the author, after some observations on the antiquity of the use of mineral oil in North America and elsewhere, and on the present condition of the oil and gas springs, and the associated sulphur and brine springs in the United States, stated that 50,000 gallons of mineral oil are daily raised for home use and for exportation. The oil region comprises parts of Lower and Upper Canada, Ohio, Pennsylvania, Kentucky, Virginia, Tennessee, Arkansas, Texas, New Mexico, and California. It reaches from the 65th to the 128th degree of long. W. of Greenwich, and there are outlying tracts besides.

The oil is said to be derived from Silurian, Devonian, and Carboniferous rocks. In some cases the oil may have originated during the slow and gradual passage of wood into coal, and in its final transformation into anthracite and graphite—the hydrogen and some carbon and oxygen, being disengaged, probably forming hydrocarbons, including the oils. In other cases, animal matter may have been the source of the hydrocarbons.

Other native asphalts and petroleums were referred to by the author, who concluded by observing that these products were most probably being continually produced by slow chemical changes in fossiliferous rocks.

EXTRACTS FROM THE REPORTS OF H.B.M. CONSULS.

(Continued from Vol. IX., page 816.)

REMARKS ON THE PRODUCTIONS AND EXPORTS OF PARA, (BRAZIL).—*Minerals.*—Of the mineral wealth of the two provinces of Pará and of the Upper Amazons little can be said, except to state the positive fact of its existence. Hitherto it has been totally neglected.

Gold, iron, quicksilver, traces of copper, &c., are to be mentioned amongst the metals which exist in various parts of this magnificent territory.

Gold exists in large quantities, not only along the banks of the Amazons' tributaries on either side, such as the Tocantins, the Pacaja, the Acara, the Madeira, the Jarí, &c., but even along the creeks which discharge themselves directly into the sea. It is found, as in Australia and California, in fine scaly dust, heavy granules and nuggets on and near the surface; and, as in California, the "washing stuff," or earth containing a remunerative quantity of gold, is more abundant in proportion to the unproductive earth, than in most of the Australian diggings. It is also stated, with much apparent reason, that auriferous quartz abounds in the range of high ground, which, after winding in a direction to E.S.E. from the Isthmus of Darien, is intersected by the Valley of the Amazons, about 700 miles from the mouth of that river. This range, so to call it, is, as it were, a spur projected from the northern continent, and juts out into the British, Dutch, and French territories of Guiana. Diamonds are amongst the principal gems which are to be found at Para (Brazil). As far as they have yet been detected, they have been small. But as the interior has been barely visited, except very cursorily, even by casual exploration, the supply of diamonds may be as great here as in the province of Bahia. Common salt, though not found within the limits of these two provinces of Brazil, would, if elaborated, contribute to the trade of this outlet. I am indebted to Mr. Richard Spruce, a traveller who is collecting botanical specimens for the gardens at Kew, for the information that vast extents of territory, (within the confines of Peru and Ecuador), through which the tributaries of the Amazons descend are covered with a deep crust (often several feet in thickness) of a salt almost free from impurities. White glistening cliffs or crags, consisting of the same material, are seen along the banks of the Huallaga.

Coal, also, is said to have been discovered within these two provinces of Brazil.

Articles of Export.—The principal articles of export are India-rubber, cocoa, Brazil-nuts, piassava, cotton, balsam of Copaiba, sarsaparilla, rice, anatto, and hides. Besides these, also smaller quantities of cravo, copal-gum, isinglass, tonquin-beans, tapioca, horns, bones, puxiry, and tobacco appear amongst the exports. A very good quality of yellow cinchona is found in this and the adjoining province; but the bark is not collected, and therefore it does not enter into commerce. Excellent vanilla, too, abounds in the forests, choking the shrubs over which it clambers with its wild luxuriance, but this produce also is wholly neglected. Innumerable medicinal plants, preparations from which are very costly in Europe, are strewn over the whole face of the country, but they are unnoticed.

India-rubber (*Seringa*[*] *or Caoutchouc*[†]).—Although the exportation of cocoa has been more considerable than that of india-rubber as to quantity, india-rubber may properly be termed the staple article of export, because not only is its value greater, but until recently it was the distinguishing production of this territory, in comparison both with the rest of South America and with the whole world. The discoveries of large quantities of india-rubber in the East Indies, and chiefly in Malacca and the off-lying islands (from a different plant); the rapid improvement in its manipulation, and increase in its exportation to Europe; the subsequent elaboration of the same product in Central America, (where, however, it had been discovered even before this territory was explored by Europeans,) though in small quantities; the same discovery and elaboration on the western coast of South America; (as about Guayaquil,) and, lastly, the more recent discovery and elaboration of caoutchouc, of very superior quality, on the coasts of Africa; all these circumstances have stripped the india-rubber trade of Para not only of its importance, but of its distinctness also. This result, which may, perhaps, change the course of commerce in this district, was due to an exuberance of prosperity. The multiplicity of inventions for the utilisation of india-rubber, which were practically applied since 1848, both in Europe and in the United States, has created an increased demand for the raw material. Mr. T. Hancock, of Manchester, and Mr. Goodyear, of the United States, were rivalling each other in manufacturing ingenuity and were being multiplied by a host of imitators, all of whom became consumers of caoutchouc. Mr. Goodyear then discovered the universalising process of vulcanisation (as it is termed), whereby the uses of this product were endlessly increased. The dealers, stimulated by an unwonted and seemingly insatiable demand, entered into a wildly speculative competition in purchasing at Para, which commenced in 1853, and attained its culminating point in 1854. The same stimulus impelled others to seek for new sources of supply in other parts, where the climate and botanical characteristics favoured the probability that such supplies would be obtained. In the meanwhile, the importations into Europe from Singapore, of a rubber of inferior quality truly, but which served many of the purposes of manufacture, and which was at first introduced at about one-fifth the price of that from Para, had considerably stanched the consumption; wherefore Para rubber, bought in this market at 2s. 8d. per lb., (the average value in England being about 1s. 8d.) resulted in such losses as reduced the value of rubber at Para, step by step, to a parity with the real value of the article in Europe and the United States. That the consumption of india-rubber is likely to be yet more increased by its being used in a vulcanised state to make the washers of machinery, to line steam boilers (as a preservative, and even, perhaps, (as has been proposed) to the inside lining of ships, and to many other purposes requiring the employment of large quantities, is doubtless true. It is also true that the elasticity and toughness of the rubber depend greatly upon the manipulation of the milk, and, amongst other things, upon the process of smoking over a fire fed with the nuts or kernels of the Urucuri palm; but the virgin forests of Western Africa are as rich and interminable as those of this country, and all the appliances are at hand there, as here, for proper manipulation, whilst the inferior qualities of rubber, which contribute to the bulk of the consumption, are to be obtained in greater abundance in British India than here. It is the product from the *Iatropha elastica* (here called the Seringa tree), which is the best, and this tree is as much indigenous to Western Africa as to the watershed of the Amazons. A tree called here the Mangabeira, also yields a milk concreting into a rubber of inferior quality; and an attempt has been made at Ceará to establish a competing supply of rubber derived from that tree. But, as this rubber can only be available for the purposes to which the Singapore rubber (obtained from a parasitic or bind-tree), or that of the Burrampooter (obtained from the Banyan), is equally applicable,—that attempt resulted in disappointment; because, owing to the listlessness and indolence of the people of this country, they can only be roused to action by the stimulus of some extraordinary advantage;—wherefore, there is either little or no efficient labour, or it must needs be very costly. Already the Seringals (Seringa woods, or sites for the collection of rubber in this province) were well-nigh deserted by the settlers of the interior, during the latter part of the past dry season (1856), because rubber had fallen to 16 or 17 milreis the arroba at Pará; whereas other articles (of consumption), whether native or foreign, had rather advanced than retrograted in price. And the Indian is not fond of working at any time, but he is still less so when he fancies he is working only for the advantage of the dealer who receives his produce. It is therefore not unlikely that the supply of rubber in this market will in future be scanty, unless there should be a great fall in the prices of all other articles on the one hand (which appears improbable), or a great rise in the price of rubber (which also appears improbable), or, again, a sudden immigration of energetic foreigners,—which is, perhaps, the most probable contingency. If elaborated, the supply is inexhaustible, because the area over which the Seringa trees abound is immense, and because the method of collecting the milk by tapping, practised here, does not destroy the tree, like the Malay fashion of hewing down the Gutta-Percha tree. The Seringa tree here, after being well tapped, and apparently spent for a time, revives and yields again, after a respite of two or three seasons. For the purpose of waterproofing, in which impermeability alone is essential (and not elasticity), the milk can be used, and has been used, without smoking; that is before it is concreted; although, even when so used, it is better for being smoked, to carry off its naturally fœtid smell (and which it loses in the artificial drying process). For this application a demand was springing up in the United States, it having been discovered that the milk could be kept liquid by being put into bottles, with a very small quantity of liquor ammoniæ, and hermetically sealed. In 1854, a sample of fifty-four arrobas of rubber milk, so preserved, was exported to New York. But hereupon the provincial government of Pará took alarm lest, if this application were continued, the whole supply of the country should be exhausted, the employment afforded by the manipulation at the Seringals should be put an end to, and distress should be brought upon the working population; reasons, neither of which had the least foundation. Wherefore a measure was immediately passed through the provincial legislature, imposing a prohibitory duty on the exportation of the liquid milk. Formerly all, or nearly all, of the india rubber met with in this country was already fashioned, either into the form of rude bottles, or shoes, &c. The latter were freely exported (chiefly to the United States) for use; but the former were mostly cut up. Now the best rubber is mostly smoked upon narrow boards, which mould it into oblong cakes, wholly free from impurities, and very convenient for packing. The exportation of rubber shoes, which formerly met the bulk of the demand, has gradually dwindled into insignificance, having been superseded by the supply of superior articles made in Europe and in the United States. There are in this country four qualities of concreted rubber, the three first of which are smoked, and the last of which is unsmoked, consisting of that which concretes, either owing to rain falling into it (whereby it is precipitated), or owing to delay in manipulating. These four varieties are known by the names of fine, medium, and coarse *Boracha*, and *Sernamby*.

---

[*] Portuguese name. [†] Native Indian name.

Cocoa.—Until very lately Pará cocoa was very generally and deservedly despised, because it was always in such bad condition. Carelessly gathered and cleared from the pulp,—very partially dried at best, and often cast into heaps and left to heat, before it was sent down from the interior to this port,—then as carelessly thrown into the bottoms of leaky boats, and, even when here, stored without proper hand-picking and drying,—it was very commonly musty before shipment. The great demand created in France during the late war to supply the large military contracts naturally directed the attention of buyers to this port, where, in consequence of the above-named circumstances, cocoa could be purchased for less than one-half the price demanded in the West Indies. The consequence has been that, even in 1855, and still more in 1856, much greater attention was paid to the collection and treatment of the cocoa; and what between its superior condition, an active demand, and a supply rendered scanty by a foregoing season of drought, it has latterly risen to more than three times its former price.

Brazil Nuts.—The collection of Brazil nuts employs the settlers of the interior (who are engaged during the dry season in collecting rubber) during the rains, when *Borracha*, or smoked rubber, cannot be prepared, because the rain water falling into the milk concretes it before it can be collected at the working shed of the Seringeiro.

Rice, Cotton, Coffee, Sugar, and Piassava.—The production of rice, which might be abundant, especially in this province, of which so vast an area consists of low, level islets, abundantly irrigated, is neither considerable nor carefully conducted. In fact, no produce which requires attention and tillage has yet obtained much consideration from the settlers of this country, who, finding mandioca in the woods, and fish in the ever-recurring *plexus* of rivers and creeks, prefer to live upon these rather than to exert themselves to procure aught else. This remark applies as well to cotton and sugar as to rice; and if there be a little more attention paid to the sugar cane in some places, it is owing to the demand for rum; for there is so little sugar made, that, although a very small quantity still appears in the catalogue of exports, the actual consumption is now really supplied from the province of Pernambuco chiefly. The excuse for the suspension of sugar making (for mills are not wanting) is that this requires much labour, and that, especially since the cholera season of 1855, hands are very scarce. Yet, over the greater part of this province there are advantages presented for the cultivation of the cane and the making of sugar which cannot be rivalled in the world; and, amongst others, there is a perfect security against the injurious effects of droughts. As to cotton, it is well known that to be successfully grown it requires cultivation and attention, whereas in this district it merely runs wild. The coffee which is produced here is also left in a state of nature, or nearly so. The chief show of cultivation consists in the occasional clearing away of large timber trees, so as to let air and sunshine in upon the coffee trees. The quality of the produce is not naturally bad, but the total neglect in which it grows affords it little chance of competing with the produce of countries in which it is carefully tended, either in quality or quantity. Nor is the quantity collected sufficient to supply the consumption, which, like that of sugar, is chiefly fed from Pernambuco. Coffee has not yet become an article of export; and sugar, of which there was a trifling exportation up to 1853, has almost ceased to be despatched to foreign markets. Piassava, which is a species of reed-fibre, is almost exclusively used in this country to make a rough but durable species of rope, resembling that made of cocoa-nut fibre, except that it is of a darker colour. This rope resists the destructive effect of moisture and sun-heat better than any other, and is the only material which will endure either for hawsers, cable, or standing rigging, in this climate. Piassava is mostly exported for brush-making; and during the transit it serves as dunnage.

Hard Woods and Dye Woods.—Although there is no manufacture of any consequence from these valuable products, and no exportation of them at all, it were a serious omission, in speaking of the productions of Pará and the Amazons, to pass over these without a brief notice. There are more than 18 varieties of cabinet woods, of the most beautiful grain and hues, many of which grow in the form of huge timber trees, and some of which are more enduring than stone. There are also several dye woods which yield imperishable colours to the most obdurate fibre.

Home Correspondence.

STEERING OF STEAMERS.

Sir,—Mr. Leigh is perfectly correct when he states that a vessel, propelled either by paddles, oars, or screws, will invariably turn on its centre when its propellers, of whatever kind, are moved in contrary directions; and if Mr. Knox doubts the truth of mechanical science, he has only to step into the first pair-oar boat he comes across, pull one oar and push the other. The practical proof would soon convince him that the boat, when so managed, can do no other than turn slowly upon its own centre.

Mr. Knox further proceeds to argue that, if practicable and useful, the invention would long since have been adopted by both the shipbuilders and the Government, while it is notorious that manufacturers never avail themselves of new inventions not their own, they having a mortal horror of any change that might possibly imply some increase of trouble and expenditure, until compelled to do so by the power of public opinion.

The case of the Government authorities is still worse —they never adopt a new idea until it has been drilled into them for a series of years, and then, when they do happen to take up some novelty, they engage in it by wholesale, while the invention may perhaps be in its infancy, and thereby cut themselves off from any ulterior improvement, by amassing an enormous stock on hand of an inferior description.

We have two cases in point at the present time—the Enfield rifle, and the Armstrong gun, to both of which arms there are others much superior.

The Enfield cannot compete with several other rifles, and Signor Cavalli's breech-loader cannon is very far in advance of anything Sir W. Armstrong has yet produced.

I do not agree, however, with Mr. Leigh in supposing for a moment that steering by the rudder can ever be dispensed with in plain sailing or steaming, but his mode of disconnecting and reversing the motion of the two paddles or the two screws will be found a most powerful and essential auxiliary in all difficult cases, and more especially in every species of naval warfare.

I am, &c., HENRY W. REVELEY.

Nov. 16, 1861.

Sir,—Your correspondent, Mr. James Knox, criticises my letter on the above subject in a manner which compels me to explain one fact, which he denies, and another which he says he does not understand, viz.:—In the case of the *John Bartlet*, which was run down off Holyhead, the first reports stated that the steersmen were confused, which caused the accident; but the evidence on the inquest contradicted this, and it was admitted that the helmsmen on both sides did their duty. The thing he does not understand, viz., " how a vessel can be made to turn round in the water without moving an inch forward," seems plain enough. Any one getting into a boat with two oars, and working them in contrary directions, with equal power, will find that the boat will not move an inch forward, but simply spin round. So with steamers.

It is idle to talk about the precise facts as regards the *John Bartlet,* since such accidents, more or less disastrous, are almost of daily occurrence, and keep increasing from year to year, as our commercial rivers and seas get more crowded, and our steamers are built larger and larger, and more than ever unmanageable in that respect. My object in first writing to you was to point out a great and growing public evil, which must be remedied on commercial, humane, and defensive grounds. On commercial and humane grounds because of the disasters that are constantly and increasingly occurring, the annual catalogue of which is frightful; as bearing on our national defences, because a vast amount of public money is now being spent in vain.

In the report of the trial trip of the *Warrior,* just ended, it is stated that it required 19 minutes to wear her, with a great strength of men at the wheel, and only 15 minutes to wear the *Revenge,* her companion (a lighter vessel). Of course this is only another illustration of my first assertion, that large masses of matter in motion cannot be turned out of their course suddenly by a small power at the helm.

Although " not exactly engaged in nautical matters," for the last 30 years I have had something to do with machinery, during which I think I have solved many difficult mechanical problems, and therefore do not believe in any of the difficulties which are stated to impede the accomplishment of this object.

There are several other things I have noticed about ships so quaint, and ill adapted to the purpose they are intended to serve, that, verily, they seem to have been copied from Noah's ark. I am, &c.,

EVAN LEIGH.

Manchester, Nov. 19th, 1861.

Proceedings of Institutions.

FARNHAM YOUNG MEN'S ASSOCIATION. — On Friday evening, November 1, the Lord Bishop of Winchester, President of the Association, presided at the lecture delivered by the Rev. J. S. HOARE, on " Geology in its relation to Scripture," and, after the lecture, announced the following annual statistics, which had been prepared by the Secretary, and which his lordship considered very satisfactory:—During the session 1860–61, fifteen meetings had been held, at which 2,922 persons attended, or an average of 195 to each lecture. The receipts of the session had been—for admission of non-members, £18 13s.; ditto, labouring classes and domestic servants (at 3d. each), £1 13s. 9d.—total, £20 6s. 9d., and this with a rapidly increasing list of members, who are admitted free. During the last month no fewer than thirty-five new members were admitted. The expenses of the session had been—printing and posting lecture bills, £8 8s. 3d.; postage, £2 11s. 6d.; gas and firing, £3 7s. 1d.; (incidentals)—for furniture, &c., £6 12s.; at lectures, £6 1s.—total, £26 19s. 10d. Library and reading-room: issue of books during the past year—tales, 2,068 vols.; biography, 479; travels, 472; poetry, 372; works of reference, 340; history, 254; essays, 219; miscellaneous, 130; science, 99; divinity, 84; natural history, 66—total, 4,523—an increase on the previous year of 861 vols. There were also issued 1,150 monthly parts of serials. The library now numbers 1,306 vols. The sum of £98 14s. 11d. had been expended on the library and reading-room during the year, out of a total income of £141 16s. 1d., of which sum £35 went to the purchase of new and second-hand books.

MEETINGS FOR THE ENSUING WEEK.

MON. ...Architects, 8. Mr. Wyatt Papworth, " On the Superintendents of English Buildings in the Middle Ages; Collections for an Historical Account of Masons, their Customs, Institutions, &c.
Ethnological, 8.
Medical, 8½. Dr. F. W. Mackenzie, " Application of Pathological and Physiological Inferences to the Prevention and Cure of Phlegmasia Dolens."

TUES. ...Civil Engineers, 8. Mr. J. Bailey Denton, " On the Discharge from Underdrainage, and its Effects on the Arterial Channels and Outfalls of the Country."
Ethnological, 8. 1. The Right Rev. the Bishop of Labuan, " On the Dyaks or Aborigines of Borneo." 2. Mr. E. B. Taylor, " On the Languages of the West part of North America."
Photographic, 8.

WED. ...Society of Arts, 8. Capt. William C. Phillpotts, R.E., " On the Building for the International Exhibition of 1862."
Geological, 8. The Rev. O. Fisher, A.M., F.G.S., " On the Bracklesham Series of Deposits."
Pharmaceutical, 8.

THURS...Antiquaries, 8½.
Chemical, 8. 1. Dr. Oppenheim, " On the Camphor of Peppermint." 2. Mr. G. C. Foster, " On Piperic and Hydropiperic Acids." 3. Prof. Bolley, " On some Physical Properties of Tin-Lead Alloys."
Linnæan, 8. 1. Mr. J. D. Macdonald, R.N., " On a New Genus of *Tunicata*, occurring on one of the Bellona Reefs." 2. Mr. J. Couch, " On the occurrence of the Crustacean *(Scyllarus Arctus)* in England."
Royal, 8½.

FRI. ......Archæological, 4.

PATENT LAW AMENDMENT ACT.

◆

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, November 22nd*, 1861.]

Dated 13th July, 1861.

1766. F. Tolhausen, 35, Boulevart Bonne-Nouvelle, Paris—Imp. in looms for weaving ribbons and other fabrics. (A com.)

Dated 20th July, 1861.

1832. J. Platt and J. Buckley, Oldham—Imp. in machinery for spinning and doubling cotton and other fibrous materials.

Dated 6th August, 1861.

1952. F. Tolhausen, 35, Boulevart Bonne-Nouvelle, Paris—Improved mechanical contrivances increasing the effect of motive power. (A com.)

Dated 26th August, 1861.

2126. F. Tolhausen, 35, Boulevart Bonne-Nouvelle, Paris—A new kind of artificial fur to be made by means of the Jacquard or other loom, with silk or other textile material. (A com.)

Dated 20th September, 1861.

2356. G. Roberts, 28, Bessborough-place, Pimlico, and F. Lambe, Cushion-court, Old Broad-street—Certain imp. in lamps and lamp wicks, whereby they are adapted for more effectively burning animal, linseed, and other heavy and also glutinous and bituminous oils, and other burning fluids employed for illuminating purposes.

Dated 8th October, 1861.

2506. A. Ford, Battersea—An improved method of forming waterproof fabrics by combining paper with woven or spun fabrics.

Dated 10th October, 1861.

2527. W. J. Williams, Warnford-court—An improved process of charging illuminating gas with the vapour of the hydruret of carbon, for the purpose of increasing its illuminating properties.

Dated 12th October, 1861.

2553. R. C. Furley, Edinburgh—An imp. in coating pills for rendering them tasteless.

Dated 21st October, 1861.

2624. E. Oldfield, Salford—Imp. in self-acting mules for spinning and doubling.
2629. W. Winniatt, Bristol—Imp. in machines for kneading dough.

Dated 22nd October, 1861.

2638. F. O. Ward, 6, Hertford-street, Mayfair—Imp. in hydraulic presses, and in the machinery and apparatus appertaining thereto and requisite in working the same, part of such imp. relating to the pumping machinery attached to hydraulic presses, and this part being applicable to pumping machinery employed for other purposes.

Dated 25*th October*, 1861.

2667. E. S. Tucker and F. E. Manners, 1, Red Lion-court, Fleet-street—Imp. in the construction of revolving and moveable surfaces applicable to the exhibition of advertisements, show cases, transparencies, and other like matters at fixed stations.

2676. J. B. Schalkenback, Treves, Rhenish Prussia—A new kind of keyed musical instrument, combining the effects of percussion instruments, or the effect of trumpets, and similar instruments, with the effects of ordinary keyed instruments.

Dated 26*th October*, 1861.

2685. J. Sidebottom, Harewood, near Mottram, Cheshire—Certain imp. in machinery for making partial tubes for the spindles of spinning and other machines.

Dated 30*th October*, 1861.

2717. R. R. Priestley, Glasgow—Imp. in the manufacture of woven fabrics.

2725. W. Cook, Beaufort-villas, Brixton, and H. Cook, Manchester—Imp. in printing telegraphs.

Dated 31*st October*, 1861.

2734. J. A. Fanshawe and J. A. Jaques, Tottenham—Imp. in the means of securing the doors of railway carriages.

Dated 1*st November*, 1861.

2740. E. A. Maling, 25, Whitehead's-grove, Chelsea—Imp. in glass cases for the cultivation of plants and flowers.

2743. B. Mitchell, Greenwich, Kent, and W. Brunton, Penge, Surrey—Imp. in the construction of scissors and shears.

Dated 2*nd November*, 1861.

2752. J. S. Brooks, 1, Cambridge-villas, Mare-street, Hackney—A new or improved back or chest protecting brace or braces.

Dated 4*th November*, 1861.

2767. J. Stewart, Glasgow—Imp. in the manufacture of cards for jacquard weaving. (A com.)

2771. J. Ashley, 13, Grosvenor-place, Bath—Imp. in apparatus for attaching horses to carriages.

Dated 5*th November*, 1861.

2772. R. Wilson, Patricroft, near Manchester—Certain imp. in steam hammers, and in valves applicable to the same and to other steam engines.

2773. J. Livesey, Manchester—Imp. in apparatus for communicating from one part of a railway train to another, and for coupling pipes.

2774. E. Brooks, Birmingham—An imp. or imps. in the manufacture of bayonets.

2775. W. Hall, Calais, France—Imp. in the production of curved and other forms in articles of lace.

2776. C. F. Hayes, Royal Small Arms Factory, Enfield—Imp. in means or apparatus for generating steam.

2777. R. Fethney, Manchester—Imp. in machinery or apparatus for preparing, spinning, or doubling cotton, silk, and other fibrous materials, parts of which imps. are applicable for winding and other purposes.

2778. R. A. Brooman, 166, Fleet-street—Imp. in steam generators, and in furnaces for the same. (A com.)

2779. E. Bowra, Upper Norwood, Surrey—Imp. in the manufacture of elastic fabrics.

2780. J. B. Love, Philadelphia, U.S.—Imp. in the mode of combining together and securing to the sides of navigable vessels and water batteries armour plates of iron or steel.

2781. J. P. Bourquin, Newman-street, Oxford-street—Imp. in ornamenting the covers of photographic albums, books, writing cases, and other like articles.

2783. H. Orth, Wissenbourg, France—An improved soap.

2784. G. T. Bousfield, Loughborough-park, Brixton—Imp. in electro-plating or depositing metals. (A com.)

Dated 6*th November*, 1861.

2785. G. Davies, 1, Serle-street, Lincoln's-inn—Imp. in fire-arms and ordnance. (A com.)

2787. A. Prince, 4, Trafalgar-square, Charing Cross—Imp. in furnaces for reducing zinc ores. (A com.)

2788. W. Ramsell, Deptford—Imp. in the construction of boats, barges, buoys, and other like structures of metal, and in machinery employed therein.

2789. F. H. Schroder, Hampstead—Imp. in evaporating and in machinery employed therein.

Dated 7*th November*, 1861.

2791. S. Cockett, Blackburn—Imp. in cop tubes.

2722. J. Walmsley, New Accrington, Lancashire—Imp. in looms for weaving.

2795. J. R. Wigham, Capel-street, Dublin—Imp. in apparatus for the manufacture of gas, parts of which are also applicable for cooking purposes.

2796. S. Lepard, Cloak-lane—Imp. in apparatus for heating and warming conservatories, greenhouses, ferneries, orchard houses, or other buildings and rooms.

2798. H. G. Gibson, Mark-lane—Imp. in apparatuses for drying hops, malt, grain and other vegetable substances, part of which is applicable as a fan or blower. (A com.)

2799. J. Hancock, Nottingham—Imp. in the manufacture of looped fabrics, and in machinery to be employed therein.

2800. W. A. Shepard, Pall-mall—Imp. in preparing and treating gutta percha and india rubber.

2801. J. Barrow, Dalton Chemical Works, West Gorton, near Manchester—Imp. in the manufacture of benzole, naptha, napthaline, aniline, and carbolic acid.

Dated 8*th November*, 1861.

2803. B. Dobson and J. Clough, Bolton-le-moors—Certain imp. in machinery for combing, preparing, and spinning cotton and other fibrous substances.

2806. J. Tyler, 62, Pratt-street, Camden-town—Imp. in the manufacture of clarionets.

2807. W. Clark, 53, Chancery-lane—Imp. in railway signal apparatus for the prevention of the collision of trains. (A com.)

2809. J. Byrne, Whitehouse, Antrim—Imp. in machinery or apparatus for scutching and refining flax, hemp, jute, and other fibrous substances.

Dated 9*th November*, 1861.

2812. M. Morgan, Wellington-street, Strand—An improved gaiter or covering for the leg.

2813. G. Simpson, Glasgow—Imp. in boring apparatus such as is used for mining purposes.

2814. R. McNair, Glasgow—Imp. in casings for stitching machines, and in adapting the same for writing.

2818. S. W. Campain, Deeping Saint Nicholas, Lincolnshire—Imp. in apparatus for stacking straw and other agricultural produce.

2819. R. A. Brooman, 166, Fleet-street—Imp. in obtaining alkaline phosphates. (A com.)

2820. R. A. Brooman, 166, Fleet-street—An improved spinning toy. (A com.)

2821. E. Loysel, Cannon-street—Imp. in match-boxes or cases.

2822. W. E. Newton, 66, Chancery-lane—Improved apparatus for manufacturing and containing gaseous liquids. (A com.)

2823. A. Turner, Leicester—Imp. in knitting machinery.

2824. W. Clark, 53, Chancery-lane–Imp. in portable and other filters. (A com.)

Dated 11*th November*, 1861.

2828. G. Leslie, the Mall, Hammersmith—Imp. in pen and writing instruments.

2829. W. Clark, 53, Chancery-lane—Imp. in safety lamps. (A com.)

2830. J. J. Shedlock, Weirdale-villas, Earl's-court, Kensington—Imp. in gas meters.

2831. G. F. Wilson and G. Payne, Sherwood Works, Battersea—Imp. in treating fatty and oily matters.

2833. C. O. Crosby, Bridge-street, Blackfriars—Imp. in the manufacture of pointed trimming, and in the machinery for manufacturing pointed trimming.

Dated 12*th November*, 1861.

2836. J. Davidson, Leek, Staffordshire—Imp. in apparatus for communicating between the passengers and the guard and engine driver of a railway train.

PATENTS SEALED.

[*From Gazette, November* 26*th*, 1861.]

November 23*rd*.

1307. J. Hynam.
1314. C. Batty.
1315. B. Collingham & M. Mason.
1318. G. Herbert.
1323. W. Roberts.
1325. E. Green and J. Cadbury.
1328. M. De Albytre.
1333. W. N. Nicholson.
1337. G. W. Rendel.
1338. R. M. Letchford.
1340. H. Crichley.
1342. J. Halliwell.
1347. W. P. Savage.
1351. T. Y. Hall and J. Stockley.
1353. A. Blake.
1354. A. Oudry.
1355. L. Heinemann.
1356. W. Bywater.
1358. W. Hunter.
1359. H. B. Mackay.
1362. F. Tolhausen.
1363. E. C. Healey.
1366. P. Cameron.
1372. R. Wilson.
1374. J. Taylor and R. King.
1378. F. N. Gisborne.
1379. R. C. Ransome.
1382. W. A. Shepard.
1486. M. Henry.
1496. S. B. Singer.
1518. J. Knowles.
1552. W. and J. Todd.
1584. J. Fletcher & J. W. Fuller.
1976. A. V. Newton.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID, AND DATES OF THEIR PRODUCTION FOR CERTIFICATE.

[*From Gazette, November* 22*nd*, 1861.]

November 18*th*.

2638. W. Lea.
2653. T. Spencer.
2654. W. Ralston.
2661. W. Warne, J. A. Jaques, and J. A. Fanshawe.

November 19*th*.

2640. H. Jordan.
2662. R. H. Hughes.

November 20*th*.

2650. S. W. Johnson and J. Varley.
2656. W. Gorman.
2787. J. Jobson.

[*From Gazette, November* 26*th*, 1861.]

November 21*st*.

2696. J. Ramsbottom.

November 22*nd*.

2681. C. Mather.
2695. J. Tangye.
2767. C. Coates.

November 23*rd*.

2668. C. Peterson.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID, AND DATE OF THEIR PRODUCTION FOR CERTIFICATE.

[*From Gazette, November* 22*nd*, 1861.]

November 20*th*.

2343. J. Betteley.

[*From Gazette, November* 26*th*, 1861.]

November 21*st*.

2525. J. Whitworth.

November 22*nd*.

2512. S. Smith.